WE CLAIM:

1. A process for extracting a target protein from *E. coli* cells, comprising:

a) lowering the pH of a solution containing whole *E. coli* cells expressing a heterologous target protein to form an acidic cell solution;

b) disrupting the cells to release protein into the acidic solution; and

c) separating cellular debris from released protein to obtain a protein product enriched in the heterologous target protein.

2. The process of claim 1, wherein the pH is lowered to a pH of about 4.0 to about 5.0.

3. The process of claim 2, wherein the pH is lowered to a pH of about 4.0 to about 4.5.

4. The process of claim 1, wherein the pH is lowered to no more than 4.0.

5. The process of claim 1, wherein said separating comprises centrifugation.

6. The process of claim 5, further comprising purifying the heterologous target protein from the protein product.

7. The process of claim 6, wherein said purifying comprises column chromatography.

8. The process of claim 7, wherein said column chromatography is expanded bed chromatography.

9. The process of claim 1, further comprising adding at least one solubility enhancer to the *E. coli* cell solution.

10. The process of claim 9, wherein said at least one solubility enhancer is added to the solution prior to said pH lowering.

11. The process of claim 9, wherein said at least one solubility enhancer is added to the solution prior to or contemporaneous with said pH lowering.

12. The process of claim 9, wherein the at least one solubility enhancer comprises a divalent cation.

13. The process of claim 12, wherein the divalent cation comprises magnesium or calcium.

14. The process of claim 9, wherein the at least one solubility enhancer is polyethyleneimine (PEI).

15. The process of claim 9, wherein the at least one solubility enhancer comprises a divalent cation and PEI.

16. The process of claim 12, wherein the divalent cation is added at a concentration of about 10 mM to about 150 mM.

17. The process of claim 14, wherein the PEI is added at a concentration of about 0.2% to about 0.3% vol/vol of a 50% wt/vol solution.

18. The process of claim 7, wherein said separating comprises expanded bed chromatography.

19. A method for decreasing biomass-biomass interactions, biomass-resin interactions, or a combination thereof, of a solution of disrupted *E. coli* cells, comprising:

a) lowering the pH of a solution containing whole *E. coli* cells expressing a heterologous target protein to form an acidic cell solution; and

b) disrupting the cells to release protein into the acidic solution; wherein the biomass-biomass interactions, biomass-resin interactions, or a combination thereof of the disrupted cell solution is reduced as compared with a solution of cells disrupted at a non-acidic pH.

20. The method of claim 19, wherein the pH is lowered to about 4.0 - 5.0.

21. The method of claim 20, wherein the pH is lowered to about 4.0 - 4.5.

22. The method of claim 21, wherein the pH is lowered to no more than 4.0.

23. The method of claim 19, further comprising adding at least one solubility enhancer to the *E. coli* cell solution.

24. The method of claim 23, wherein the at least one solubility enhancer comprises a divalent cation.

25. The method of claim 24, wherein the divalent cation comprises magnesium or calcium.

26. The method of claim 23, wherein the at least one solubility enhancer is PEI.

27. The method of claim 23, wherein the at least one solubility enhancer comprises a divalent cation and PEI.

28. The method of claim 24, wherein the divalent cation is added at a concentration of about 10 mM to about 150 mM.

29. The method of claim 26, wherein the PEI is added at a concentration of about 0.2% to about 0.3% vol/vol of a 50% wt/vol solution.

30. A method for altering a flocculent in a solution of disrupted *E. coli* cells, comprising:

a) lowering the pH of a solution containing whole *E. coli* cells expressing a heterologous target protein to form an acidic cell solution;

b) disrupting the cells to release protein into the acidic solution;

wherein moisture content of a flocculent in the released protein solution is greater when cells are disrupted in an acidic solution as compared with a non-acidic solution.

31. The method of claim 30, wherein the pH is lowered to about 4.0 - 5.0.

32. The method of claim 31, wherein the pH is lowered to about 4.0 - 4.5.

33. The method of claim 32, wherein the pH is lowered to no more than 4.0.

34. The method of claim 30, further comprising adding at least one solubility enhancer to the *E. coli* cell solution.

35. The method of claim 34, wherein the at least one solubility enhancer comprises a divalent cation.

36. The method of claim 35, wherein the at least one divalent cation is magnesium or calcium.

37. The method of claim 34, wherein the at least one solubility enhancer is PEI.

38. The method of claim 34, wherein the at least one solubility enhancer comprises a divalent cation and PEI.

39. The method of claim 35, wherein the divalent cation is added at a concentration of about 10 mM to about 150 mM.

40. The method of claim 37, wherein the PEI is added at a concentration of about 0.2% to about 0.3% vol/vol of a 50% wt/vol solution.

41. A protein product produced by the process of claim 1.

42. A protein product produced by the method of claim 19.

43. A protein product produced by the method of claim 30.